

REMARKS

Claims 12 and 14-17 are pending of which claim 12 is independent. In this Amendment, claim 12 has been amended to clarify an aspect of the invention, claim 17 has been cancelled and new claim 18 has been added. Support is found in, for example, FIGS. 3 and 4 and page 7, line 13-page 8, line 16 of the application-as-filed. Care has been undertaken not to introduce new matter.

Claim Rejections Under 35 U.S.C. §103(a)

Claims 12 and 14-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kanaya et al. (U.S. Patent No. 6,217,158, hereinafter “Kanaya”) in view of Chang (U.S. Patent No. 6,099,111, hereinafter “Chang”) and Hasegawa et al. (U.S. Patent No. 5,530,465 hereinafter “Hasegawa”). The rejections are respectfully traversed for the following reasons.

Amended claim 1, in pertinent part, recites a head for an ink-jet printer wherein “said ink nozzles are disposed two-dimensionally side by side on a silicon substrate located on the most upper surface of said plurality of silicon substrates,” “a plurality of said common ink supply ports are disposed two-dimensionally side by side on said inorganic substrate,” and “a plurality of ink tanks commonly supplying ink to each of said common ink supply ports disposed side by side in one direction are disposed along the direction perpendicular to said one direction.”

As illustrated in FIGS. 3 and 4, one example of what is claimed in claim 12, the ink nozzles 5 are disposed side by side both in X-direction and Y-direction on the silicon substrate 1. The plurality of ink supply ports 11 are disposed side by side both in X-direction and Y-direction on the inorganic thin substrate 2 that is formed on the opposite surface to the surface of the silicon substrate 1 in which the ink nozzles 5 are formed. In addition, the plurality of ink tanks

13 which supplies ink to the ink supply port 11 are disposed perpendicular to the direction of ink supply ports to cover the inorganic thin film substrate 2 on which the ink supply ports 11 are formed. The proposed combination of Kanaya, Chang and Hasegawa fails to disclose the above limitations of claim 12.

On pages 2 and 3 of the Office Action, the Examiner asserted that Kanaya's FIGS. 26-28 discloses "ink nozzles" and admitted that Kanaya fails to disclose "common ink supply ports" and "ink tanks." However, the Examiner further averred that Chang discloses the "common ink supply ports" and "ink tanks" and concluded that it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify Kanaya's printer head to include and locate a common ink supply port disclosed by Chang.

Kanaya's FIGS. 26-28 illustrates a cross-sectional view of a printer head in which an ink nozzle is formed, but Kanaya's FIGS. 26-28 does not disclose array of plural ink nozzles. Because Kanaya disclose only one ink nozzle and are silent on array of plural ink nozzles, Kanaya fails to disclose "ink nozzles ...disposed two-dimensionally side by side on a silicon substrate." In addition, Chang and Hasegawa are silent on two dimensional array of "ink nozzles."

Chang's nozzle openings 7 and 8, on which the Examiner relied to disclose "ink supply ports", are arrayed in a row only to one direction on the nozzle plate 9. In addition, Hasegawa's spray head discloses array of nozzles in which nozzles 801 are formed in a row only to one direction on the substrate 107. These are in direct contrast with what is claimed in claim 12 in which "a plurality of said common ink supply ports are disposed two-dimensionally side by side on said inorganic substrate." Moreover, Kanaya is silent on "ink supply ports" as the Examiner admitted.

Chang's communication path 2, opening 13, through hole 20 and buffer tank 22, on which the Examiner relied to disclose "ink tanks," illustrates only one of each element. Chang does not disclose array of communication path 2, opening 13, through hole 20 and buffer tank 22. Thus, Chang fails to disclose "a plurality of ink tanks commonly supplying ink to each of said common ink supply ports disposed side by side in one direction are disposed along the direction perpendicular to said one direction." In addition, Kanaya is silent on the "ink tanks, as the Examiner admitted, and Hasegawa is silent on the "Ink tanks", as well.

Accordingly, as each and every limitation must be disclosed or suggested by the cited prior art references in order to establish a *prima facie* case of obviousness (*see*, M.P.E.P. § 2143.03) and for at least the foregoing reasons the proposed of Kanaya, Chang and Hasegawa fails to do so, it is respectfully submitted that claim 12 and the claims dependent thereon are patentable over the combination of Kanaya, Chang and Hasegawa.

Conclusion

Upon entry of the above claim amendments, claims 12 and 14-18 remain active in this application. Applicant submits that all of the claims are in condition for allowance. Accordingly, this case should now be ready to pass to issue; and Applicant respectfully requests a prompt favorable reconsideration of this matter.

Application No.: 09/343,092

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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